

Winter 2003

# Hydro Herald News

A Newsletter For Teachers

Published by the Sonoma County Water Agency Water Education Program

Greetings To All,

We hope everyone enjoyed their winter break and feels ready to take on 2003! This newsletter is designed to give you an update on our education program and to share with you some new and exciting resources of which you might not be aware.

We have a few announcements regarding the 2002 -2003 school year. With the opening of the Environmental Discovery Center at Spring Lake Park which is concentrating on programs for grades one and two, we decided it was an ideal time to develop and implement a new instructional field study program for fourth grade.

This new component of our program focuses on watersheds and will be conducted for the first time this spring. Fourth graders will explore the upper reaches of Spring Creek and then follow the water as it moves downstream and merges into larger watersheds. We will examine natural processes as well as man-made modifications within the watersheds. The program consists of a pre-site visit to the classroom by Water Agency staff followed by a full day field trip. We will continue to offer our existing field study programs for grades five and six and the classroom instructional program for grade three.

Two FREE teacher workshops will be offered this spring - a *Water Cycle Felt Board (Make & Take) Workshop*, and a *Pollution Prevention Workshop*. Content information and a registration form are included on pages 6 & 7 of this newsletter.

We have received positive feedback on our new grade level lessons that debuted last year. Each lesson was designed with a subject-specific focus that supports the newly revised (2000) California Science Standards. During the 2001 - 2002 school year, we offered field study programs for grades one, five and six as well as a classroom instructional program for grade three. The total number of students reached with direct instruction and education materials during the 2001-2002 school year was 8,059!

We were pleased to have been named joint recipients of the 2002 California Science Teacher Association Distinguished Informal Science Educator Award at CSTA's annual meeting held in San Francisco last October.

Please continue to look to us as a resource, whether it is printed materials, curricula, or directly working with you or your students. Thank you for your interest in Water Education.

Cary Olin

Dan Kahane

Water Agency Information Specialists



## FREE Teacher Workshops:

### Water Cycle Workshop

Thursday, February 20

(3:30 pm - 5:30 pm)

### Pollution Prevention Workshop

Thursday, March 6

(3:30 pm - 5:30 pm)

Check out our web site at:

[www.SCWA.ca.gov](http://www.SCWA.ca.gov)

Just click on the education button and you can view our water education packet, order education materials, request classroom instruction and sign up for workshops.

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# Check It Out!

*The following resources are available through the Water Education Lending Library. Materials are loaned out for a two week period.*



## Science Court: Water Cycle Video (Grades 4-6)

Is there water in the air? Science Court finds out! This engaging, fast-paced cartoon features a unique animation style and humorous characters in a courtroom setting to convey the scientific concepts of the water cycle, condensation, evaporation, and states of matter. Due to the pace and the humor of the cartoon, students will hardly realize they are being taught science. (22 minutes).

NEW!

## The Hydrologic Cycle: Water in Motion Video (Grades 7-12)

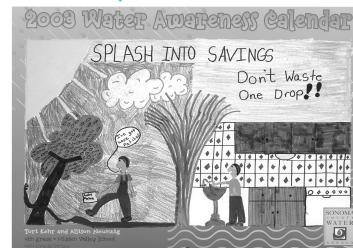
An excellent video that teaches junior high and high school students how water moves through the hydrologic cycle. It explores how natural events affect evaporation, condensation, precipitation, runoff, and storage using computer animated models and diagrams. In addition, the video covers the human impact on the water cycle (deforestation, global climate change, desertification, and air/water pollution), and describes why water is truly a global environmental concern. (20 minutes).

NEW!

## CAL Alive! - Exploring Biodiversity Curriculum (Grades 4-8)

This is a comprehensive learning package that incorporates 3 CD-ROMS, a Classroom Guide, a Teacher Resource Guide, and an interactive website to teach fourth through eighth grade students about California's rich biological diversity. The computer program includes games, virtual panoramas, video fly-bys, stories, and virtual experiments to explore the diverse habitats and species found throughout California. Very user-friendly, excellent graphics, and the content is based around California State Science Standards!

## 2003 Water Awareness Calendars are here!



If you didn't receive your calendar, please call 707-521-6211 to request one.

## Volunteer of the Century

Well, almost... **Jocelyn Gardner**, who has been our resident Volunteer Naturalist for the past three years, was recently recognized by the County of Sonoma Volunteer Program and is pictured above with her award for **Outstanding Volunteer**. A familiar face to many of you, Jocelyn has assisted with the Water Education Field Study classes during the fall and spring months. Her extensive knowledge of Sonoma County natural history and her excellent teaching skills have contributed greatly to the success of our programs.



## Connect with CREEC

The California Regional Environmental Education Community (CREEC) is a public/private partnership sponsored by the California Department of Education (CDE) Office of Environmental Education. There are 13 regional hubs throughout the state.

The North Coast Region 1 of the CREEC Network serves the teachers and non-formal educators in Del Norte, Humboldt, Lake, Mendocino, and Sonoma counties. Activities and services offered include:

- A web page at [www.creec.org/region1](http://www.creec.org/region1) that explains network services, lists upcoming environmental education events and links to other resources.
- An online resource directory listing local and statewide environmental education resources.
- A monthly news bulletin with the latest information on workshops, events and activities in the North Coast region.

For additional information, contact North Coast CREEC Coordinator Gretchen Brooks by phone: 707-457-3131 x133 (work), 707-464-0730 (message) or email: [gretchbrooks@yahoo.com](mailto:gretchbrooks@yahoo.com).



*Did you know that  
falling raindrops  
are actually **ROUND** and not  
tear-shaped  
as is commonly believed?*

## The River of Words & Coastal Art And Poetry Contest

Each year, in affiliation with the Library of Congress, **River of Words** conducts a free international poetry and art contest for youth on the theme of **watersheds**. The contest is designed to help youth explore the natural and cultural history of their local watersheds and to express what they discover through poetry and art.

The contest is open to children aged 5-19, and entries must be postmarked by February 15, 2003. Judges will choose winners in four age categories for both the poetry and art divisions. Eight national prize-winners and one international winner, together with their parents, will win trips to Washington, D.C. to be honored at the Library of Congress next spring.

To obtain more information, contact:

River of Words  
P.O. Box 4000-J  
Berkeley, CA 94704  
Phone: 510-548-POEM (7636)  
Fax: 510-548-2095  
Email: [info@riverofwords.org](mailto:info@riverofwords.org)  
Web: [www.riverofwords.org](http://www.riverofwords.org)

The California Coastal Commission is joining with River of Words to present the **2003 Coastal Art and Poetry Contest**. Entries for this contest must have a coastal or marine theme. The age categories, rules, and guidelines and deadlines are the same as above. Winners will receive a \$100 gift certificate to an art supply or book store. For entry forms and further information, call 1-800-COAST-4U, email [coast4u@coastal.ca.gov](mailto:coast4u@coastal.ca.gov) or visit their web page at: [www.coastforyou.org](http://www.coastforyou.org).

# Discovery Corner - The Great Pepper Chase



## Purpose:

To explore ways to strengthen and weaken surface tension.

## Materials: (for each group of 4-6 students)

aluminum pie pan  
liquid dish soap  
medicine dropper  
pepper  
cinnamon  
sugar  
1/4 teaspoon measuring spoon  
paper towels  
water



## Discussion:

Review surface tension and the fact that the "skin-like" surface of water is able to support the weight of a lightweight item, such as a paper clip, a needle, or an insect. Ask students to speculate what might happen to pepper, cinnamon, sugar, and liquid soap when each is added to water. Will they sink, float, dissolve, or mix? Record student predictions so that they can be compared with actual results after experimentation.

## Procedure:

1. Fill the aluminum pan 1/2 full of water.
2. Sprinkle 1/4 teaspoon of pepper on the surface of the water. Record observations.
3. Using the medicine dropper, squeeze one drop of liquid soap onto your finger. Place your finger in the water. Record observations.
4. Sprinkle 1/4 teaspoon of sugar on the water. Watch carefully what happens to the sugar and the pepper, and record observations.
5. Wash and clean the pan of all traces of soap and refill it 1/2 full of water.
6. Sprinkle 1/4 teaspoon of cinnamon on the surface of the water. Record observations.
7. Using the medicine dropper, squeeze one drop of liquid soap onto your finger. Place your finger in the water. Record observations.
8. Sprinkle 1/4 teaspoon of sugar on the water. Watch carefully what happens to the sugar and the cinnamon, and record observations.

## Teacher's Notes:

After completing the experiment, ask students to use their observations to conclude which substances strengthened and which weakened the surface tension of the water.

In the first part of the experiment, the pepper will "run" when soap is added to the water. When sugar is sprinkled onto the water, the pepper will "run" back. When the activity is repeated in the second part using cinnamon, the reaction will be the same. Any kind of soap added to the water weakens the pulling power. By adding sugar, the skin has a stronger pull.

Older students may be interested to know that water is lipophobic (literally, fat fearing) and hydrophilic (literally, water loving). Soap (which is basically fat) is hydrophobic (water fearing) and lipophilic (fat loving). *Hydro* means "water," *phobic* means "fear of," *lipo* means "fat," and *philic* means "love." Ask students what other words they can think of that contain these roots.

*(Adapted from H2O Science by Jean Stangl)*



# STAR Assessment/Standards-Based Science Test Blueprints

The Blueprints for the STAR Science tests can be found on the California Department of Education website. These are Blueprints for Grade 5 and high school courses in:



*Biology/Life Sciences*  
*Chemistry*  
*Physics*  
*Earth Sciences*  
*Integrated Science 1-4*

These Blueprints can be accessed at:

<http://www.cde.ca.gov/statetests/star/resources/blueprints.html>

## www.some\_great\_

### FOR ADULTS/TEACHERS:

[www.groundwater.org](http://www.groundwater.org) - The Groundwater Foundation is dedicated to informing the public about one of our greatest hidden resources - groundwater.

[//water.usgs.gov/education.html](http://water.usgs.gov/education.html) - U.S. Geologic Survey site, contains many links to receive lessons, posters, and other materials focusing on wetlands, water use, wastewater, and water quality.

[cde.ca.gov/ci/scimathlit/index.html](http://cde.ca.gov/ci/scimathlit/index.html) - CA Department of Education website: "Literature for Science and Mathematics: Kindergarten Through Grade Twelve." The site's searchable database contains over 1,400 outstanding selections of standards-based fiction and non-fiction literature recommended for children and adolescents related to the study of natural sciences and mathematics content.

[www.projectwet.org](http://www.projectwet.org) - Water Education for Teachers site, contains a number of valuable resources and links to help educators teach about water issues.

[www.globe.gov](http://www.globe.gov) - GLOBE International is a program for K-12 scientists to take local environmental measurements and report them to an internet database. More than 10,000 schools in 97 countries participate, including a few Santa Rosa schools.

### FOR CHILDREN:

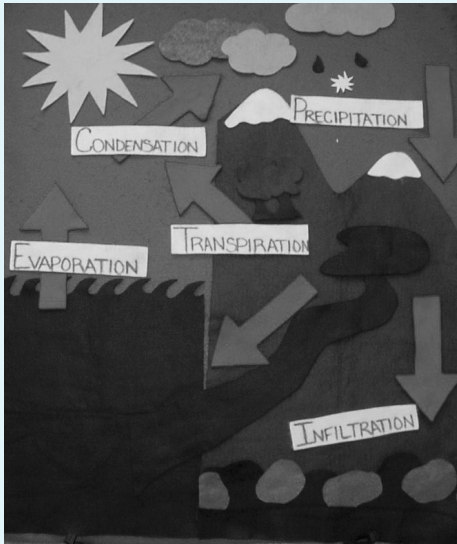
[www.nwwater.com/kidzone/index.html](http://www.nwwater.com/kidzone/index.html) - Explains the water cycle, importance of conservation, etc.

[www.groundwater.org/KidsCorner/kidscorner.htm](http://www.groundwater.org/KidsCorner/kidscorner.htm) - An excellent, easy to navigate site for kids filled with games, graphics, and other information.

[www.epa.gov/safewater/kids/](http://www.epa.gov/safewater/kids/) - The E.P.A.'s website has great games and activities for kids to learn about water. The site is also available in Spanish.

[www.kidsclick.org/](http://www.kidsclick.org/) - Age-appropriate internet search for kids - great for research in all subjects.

# FREE Workshops for Teachers!!!



Water Cycle Workshop  
Thursday February 20, 2003  
3:30 – 5:30 p.m.

Spend a couple of hours after school and make your own full-color Water Cycle Felt Board. We will also distribute several additional activities for use in your classroom when teaching about the water cycle. All materials and patterns will be provided. This workshop will be held at the Sonoma County Water Agency Russian River Field Study Site, 9750 Wohler Road, Forestville. To sign up, see registration form on page seven in this newsletter or call the Water Education Program at (707) 521-6211 or 521-6209.



Pollution Prevention Workshop  
Thursday March 6, 2003  
3:30 – 5:30 p.m.

Where is "away?" Where does our water go after it goes "down the drain?" We'll use hands-on activities to investigate the paths that wastewater and various pollutants take after they leave our homes, schools and businesses. Learn about *point source* and *non-point source* pollution, and how we can be a part of a solution to pollution. Materials and lesson plans will be provided. This workshop will be held at the Sonoma County Water Agency Russian River Field Study Site, 9750 Wohler Road, Forestville. To sign up, see registration form on page seven in this newsletter or call the Water Education Program at (707) 521-6211 or 521-6209.



To register for our  
Spring Workshops  
see the Registration Form  
on the next page -->  
or register online at  
[www.scwa.ca.gov](http://www.scwa.ca.gov)



# ~ A Number of Water Facts ~

370,000,000,000,000,000,000 - There are 370 quintillion gallons of water on earth.

1,000,000,000,000 - One trillion tons of water evaporate into the atmosphere every day.

2,400,000,000 - 2.4 billion people (two-fifths of the world's population) lack access to improved sanitation and waste water treatment. 1.1 billion people (one-sixth of the world's population) are without access to improved water supply and indoor running water.

1,075,800 - It takes over one million gallons of water per year to grow enough food to feed an average American family. The average household uses 163,000 gallons of water per year.

1,000,000 - It takes approximately one million tiny drops of water vapor to gather enough weight to create one drop of rain.



Outdoor landscaping accounts for about 50% of the water Californians use at home. Showers account for another 9%, while toilets use about 14% and laundry 12%.

## Workshop Registration Form

Please complete the following information:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

School: \_\_\_\_\_ Grade Level: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax / e-mail: \_\_\_\_\_

Please register me for:

☐ **Water Cycle "Make and Take" Workshop** - Thursday February 20, 2003  
3:30 -5:30

☐ **Pollution Prevention Workshop** - Thursday March 6, 2003  
3:30 -5:30

All workshops will be held at the Sonoma County Water Agency Russian River Field Study Site, 9750 Wohler Road, Forestville. A confirmation and map will be sent to you upon registration. Please mail or fax registration form to:

Sonoma County Water Agency  
P.O. Box 11628  
Santa Rosa, CA 95406  
Fax# 707-528-2080

Questions? Call Cary Olin @ (707) 521-6211 or Dan Kahane @ (707) 521-6209.



## Calendar of Events:

**Saturday, February 15** (10:00 am - 4:00 pm)

**BAEER Fair - Marin Civic Center, San Rafael** - Bay Area Environmental Education Resource Fair. For additional information contact Ken Hanley at (510) 657-4847.

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**May is Water Awareness Month.**

For more information visit: <http://www.dwr.water.ca.gov/>

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**May is American Wetlands Month.**

Visit <http://www.epa.gov/owow/wetlands/awm/> to learn about how your class can celebrate.

Sonoma County Water Agency  
P.O. Box 11628  
Santa Rosa, CA 95406

The Water Education Program is designed to help educators teach students the value of water as an important natural resource. Through conservation and education, individuals become aware of how their daily habits affect the management and distribution of water. The program is made possible through the Sonoma County Water Agency and your local water suppliers: City of Santa Rosa, City of Petaluma, North Marin Water District, City of Rohnert Park, City of Sonoma, City of Cotati, Valley of the Moon Water District and Forestville Water District.

